Small Business Innovation Research/Small Business Tech Transfer

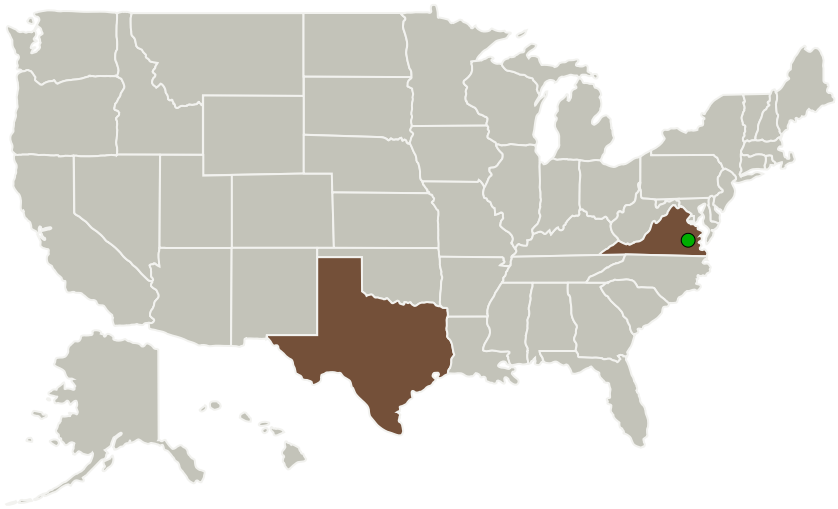
Health Interrogation for Space Structures (HISS), Phase I

Completed Technology Project (2017 - 2017)

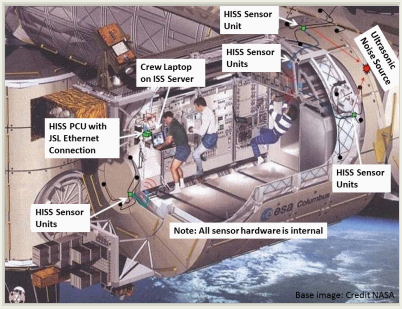
Project Introduction

Invocon's Health Interrogation for Space Structures (HISS) system provides a significant improvement over current alternatives for monitoring pressurized space structures for leaks and impacts. HISS will quickly detect and locate leaks based on their acoustic emissions or other signature. It will provide prompt warnings to flight and ground personnel in order to help save the vehicle (and mission). It will also complement the present Environmental Control and Life Support System (ECLSS) capabilities by providing leak location as well as warning of the leak up to several minutes before the ECLSS. The primary transducers with which HISS interfaces are acoustic emissions. However, Invocon plans to design HISS so that it will interface with other types of sensors in order to maximize its usefulness. This will allow HISS to be used for many other flight and ground monitoring applications.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Invocon, Inc.	Lead Organization	Industry Veteran-Owned Small Business (VOSB)	Conroe, Texas
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



Health Interrogation for Space Structures (HISS), Phase I Briefing Chart Image

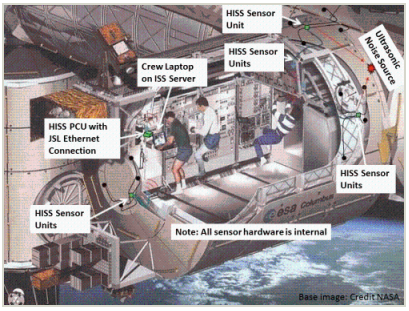
Table of Contents

Health Interrogation for Space Structures (HISS), Phase I

Completed Technology Project (2017 - 2017)

Primary U.S. Work Locations	
Texas	Virginia

Images



Briefing Chart Image
Health Interrogation for Space Structures (HISS), Phase I Briefing Chart Image
(https://techport.nasa.gov/image/127655)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Invocon, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

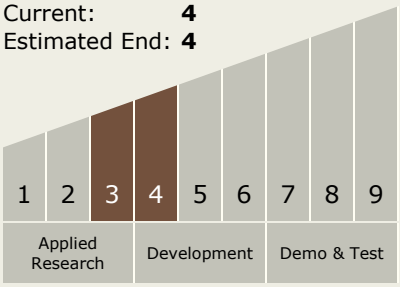
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Eric Krug

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.4 Environmental Monitoring, Safety, and Emergency Response
    - TX06.4.1 Sensors: Air, Water, Microbial, and Acoustic

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System